
EIGHTH FIVE YEAR PLAN AND FORESTRY SECTOR DEVELOPMENT IN PAKISTAN

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Development planning plays a crucial role in the socio-economic development of a country. It aims at optimal utilization of the available resources in order to maximize social welfare. Pakistan, after independence, was confronted with numerous problems. After laying down the foundation of certain institutions and setting in order the administrative machinery the policy makers resorted to development planning as early as 1951. The initial effort was not a systematic and coherent one. Nevertheless, it was a starting point for development planning process. The process was started with the formation of Six-Year National Development Programme (1951-57), a part of co-operative effort under the Colombo Plan. The Programme was a collection of projects rather than a development plan and was replaced in 1955 by the First Five Year-Plan. The next twenty years since 1955 were covered under four consecutive medium-term (five year) plans. The first three Five-Years Plans (1955-70) were implemented while the Fourth Plan (1970-75) had to be scrapped due to separation of the former East Pakistan. Thus, the country had to resort to adhoc planning on an annual basis and it continued for six years (1972-78). Again since July 1, 1978 the medium-term plans i.e., Fifth, Sixth and Seventh Five-Year Plan (1978-93) has been launched. However, within the medium-term frame-work the annual plans are also prepared.

The Planning experience in Pakistan has remained mixed; some plans have proved a great success while some ended with shortfall in realization of their targets, because of certain unforeseen events. The forestry sector faced similar situation in the past. Presently, Eight Five-Year Plan is being prepared which would cover

period of 1993 to 1998. This Plan would include development of forestry sector in Pakistan. It would be worthwhile, at this stage, to examine the impact of development activities carried out in the forestry sector in the past under different five-year plans and to state objectives and identify goals of this sector for 8th Five-Year Plan. This analysis will be done in the light of the National Forest Policy announced in 1991, the National Conservation Strategy approved in 1992 and the forthcoming Forest Sector Master Plan.

Current Forestry Situation

The total area of Pakistan is 87.98 million ha of which 4.5 million ha are designated as forests under Forest Act of 1927 and other provincial forest legislations. The forest vegetation depends upon climate, which is highly variable in Pakistan. Seven forest types are found in the country, namely: coniferous, scrub, irrigated plantations, riverine, mangrove, mazri, and linear plantations. About 52 million ha or 59 percent of total area consists of rangelands, which are located in all ecological zones. Of this, 6.409 million ha are under the management of provincial and regional forest departments. In spite of the fact that the forest area is highly inadequate, both forests and rangelands are not intensely managed and have low productivity.

The coniferous and scrub forests constitute bulk (3.21 million ha or 76%) of the total forest area in the northern Himalaya- Karakoram - Hindu Kush regions which are suitable for tree growth due to climate and topography. However their accessibility is poor due to low forest road density. These forests are under pressure of tree cutting for

fuelwood and timber by people living in their vicinity as well as for grazing by their cattle and have therefore, depleted over the years. Further, about 20% of total watershed area is covered by these forests which produce water for domestic supply, ground water recharge, on site farming, natural vegetation growth and for generation of electricity and irrigation of farmlands in the plains. The importance of watersheds is very high in Pakistan because more than 70% of the total area is arid.

Significant forest extension has not occurred in Pakistan in more than four decades inspite of best intentions and efforts on the part of provincial/regional forest departments. This is mainly due to low priority given to forestry sector in the national economic development planning and concomitant low resource allocations. This is reflected in low resource allocation to forestry sector during the currency of different five-year plans as shown below:

Rs.in million

Plan	Total Plan Provision	Total Plan Expenditure	Plan Provision for Forestry	Funds Released for Forestry
Ist (1955-60)	10,800	10,590	39	35
2nd (1960-65)	23,000	27,540	87	72
3rd (1965-70)	52,000	48,850	140	92
4th (1970-78)	75,000	75,000	216	212
5th (1978-83)	210,200	201,630	1,223	629
6th (1983-88)	527,000	417,200	1,571	749
7th (1988-93)	642,000	-	5,260	-

Although the expenditure figure for Seventh Plan are not available, still it is clear from the above that forestry sector has been allocated less than 0.5 percent of total provisions in different plans. Further, the ratio between plan provisions and actual releases has declined from 1:1 to 2:1 in last four decades. Although, in monetary terms, the funds released have increased, but when one considers the gradual increase in forest area due to

extension of scientific forest management to the former privately states of Dir, Swat, Chitral and Amb in NWFP in late sixties, the escalation in labour cost, inflation, etc, there has been a gradual decline in monetary resource per unit area. Consequently, development efforts to improve forestry situation have been meagre, scattered and patchy throughout the country during last 40 years.

However there are some note-worthy exceptions to above situation. Most of the productive forests and plantations are managed through management plans prepared by locally trained manpower. Pilot programmes of intensification of management of natural coniferous forests, rehabilitation of watersheds, irrigated plantations and riverain forests have been started with the assistance of international donor agencies. Promotion of tree growth on the farmlands has been successfully carried out in some localities in all provinces/regions through farm forestry programmes. This has gone a long way in meeting timber and fuelwood requirements of large sections of increasing population. General public is more aware of importance of forests now than it was in the past. Non-government Organization (NGOs) have taken up the cause of forestry for environmental stability and control of pollution in the country and are promoting and participating in tree planting activities. In certain project areas, people participation in management of state forests has also been started. The forestry research and training facilities have also been expanded and strengthened in the country over the years. Besides, the strengthening and expansion research and training facilities in the Pakistan Forest Institute, a provincial forest research institute has been established in Punjab province.

Eighth Five Year Plan

As mentioned above, future forestry development planning would be based on the National Forest Policy, the National Conservation Strategy and the proposed Forestry Sector Master Plan. Considerable technical and financial inputs have gone into preparation of these documents and a number of programmes have been proposed in them. For instance, one of the main objectives of National Forest Policy, announced in May 1991, is to increase forest area from the existing 5 percent to 10 percent in the next 15 years. On this

basis 4.5 million ha of additional area will be brought under tree cover by the year 2005. It would therefore, be necessary to carry out afforestation and reforestation on public and private lands and by raising linear and block plantations on farmlands over 0.3 to 0.35 million ha per annum or on 1.8 million ha during the currency of Eighth Plan. This is approximately 10 time the current planting targets and would require financial outlays in the same proportion to meet the targets during Eighth Plan.

Similarly, the National Conservation Strategy has also stressed the conservation of natural resources, sustainable development and improved efficiency in the use and management of resources and proposed a number of goals. The Forestry Sector Master Plan is being prepared within the framework of both National Forest Policy and National Conservation Strategy. In the meantime, Planning Commission of Pakistan has also prepared a policy framework in the form of an Approach Paper for Eighth Plan. It provides guidelines for development planning in different sectors including forestry in the country during the Plan period. A number of programmes can be suggested for the plan in the light of past experience of forestry development in Pakistan as well as keeping in view programmes and goals proposed in these documents.

In order to halt degradation and depletion of state forests, especially coniferous forests, through cutting of trees for fuelwood and timber by local people and by grazing of their cattle, special development programmes for intensification of their management, growing of trees on the farmlands, people's participation in forest management activities, etc., will have to be started. Existing forest resources are too inadequate to meet needs of fuelwood, timber and fodder of increasing human and cattle population. These forests are also insufficient for protection of

watershed and environmental stability. Forest extension programmes will have to be started on state land all over the country. There is also considerable scope for growing of trees on the farmlands in the plains. This could be achieved through provision of incentives, grants and subsidies to them. Further, since women constitute more 50 percent of population of the country, measures be taken to ensure their participation in tree planting activities.

In the past, provincial and regional forestry departments were solely responsible for forestry development activities in the country. It may not be possible for these departments to handle enhanced forestry programmes e.g., ten time the

existing planting targets in coming years. Since forestry has close linkages with environment, irrigation and power generation, rural development etc., therefore, the government departments dealing with these subjects should be encouraged to shoulder the responsibilities of forestry development and extension through budget allocations for this purpose within their departments. Lately, new departments of environmental protection have been established at federal and provincial regional levels. Other departments already exist. Their mandate of work has to be expanded to include forestry development and extension.

ESTIMATION OF CROWN BIOMASS PRODUCTION OF *POPULUS NIGRA ITALICA* MUENCH IN PAKISTAN

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ABSTRACT

In areas where Lombardy poplar (*Populus nigra Italica* Muench) grows in Pakistan crown biomass is lopped at various intensities and the woody branches and foliage components are used as fuelwood and fodder. The objective of this study was to develop simple and practical prediction models using linear regression to estimate crown biomass. Models were developed for green and air-dried branch wood and fodder crown biomass components under different lopping intensities. Tables were produced for each crown biomass component that can be used to formulate management, planning and marketing strategies. Diameter at breast height squared (Dbh^2) and its square proved to be the best independent variables to predict crown biomass weights.

INTRODUCTION

Lombardy poplar (*Populus nigra Italica* Muench) is an economically important tree species for fuelwood, fodder and timber in the dry temperate climatic zone of Pakistan. The tree is propagated on private farmlands and government plantations.

Lopping of poplar is a traditional practice and is generally believed, without any scientific evidence, to be conducive to greater height growth and better bole qualities. Poplar is lopped at various levels of intensity, ranging from up to one-third of the total height of the tree to, in extreme but frequent cases, up to two-thirds of the total tree height. Traditionally accepted rules of thumb for lopping are observed but the practice has never